The election of officers then took place, resulting as follows:

President, Mr. E. A. Schwarz; 1st Vice-President, Dr. C. V. Riley; 2d Vice-President, Dr. George Marx; Recording Secretary, Mr. John B. Smith; Corresponding Secretary, Mr. O. Lugger; Treasurer, Mr. B. P. Mann; Members of Executive Committee, Mr. L. O. Howard, Mr. Theo. Pergande, Dr. W. H. Fox.

The retiring President then read his Annual Address, as follows:

ANNUAL ADDRESS OF THE PRESIDENT.

A Commencement of a Study of the Parasites of Cosmopolitan Insects.

By L. O. HOWARD.

The desirability of a general compilation of the parasitic relations of all parasitic Hymenoptera has been forced upon me in my study of these forms, and I have for some time been engaged in recording in spare moments such relations wherever published, with a view of bringing out in two great tables the parasites and the insects from which they have been reared, arranged, first, according to the classification of the parasites, and, second, according to classification of the insects parasitized. Whenever, in making these records, the insect playing the part of host (victim seems a better word) has chanced, to my knowledge, to be a cosmopolite, or at least to occur in both Europe and North America, I have considered its parasites with greater interest, and the idea which I had long since conceived, and which I have not seen formulated elsewhere, that the comparative study of the parasites of such species would be followed with results of considerable interest, and possibly of some practical value, has occurred to me with added force. This recording has advanced so far at the present time that I have been able to accumulate sufficient facts for a preliminary paper on this subject, which, it strikes me, is so broad in its interest and so well calculated to appeal to entomologists of all specialties that it is well adapted to an address of this kind.

In advance of a consideration of the actual records it is obvious that a plain tabulated statement. such as I shall give, will be of use in the following ways: It will be a slight help in determination of parasites; it will be an indication of possible synonymy

where names differ; it will bring before the eye in comparison species which are vicarious, which represent each other in different countries, although specifically distinct; it will assist us towards a clearer idea as to the general habits (whether uniform or variable) of genera and other groups of parasites. These points, however, will of course be brought out in a much stronger manner by the tabulation of the entire records, although this present tabulation will assist in these directions. The table which follows, however, will form a record upon which to base the collection and importation of the parasites of a destructive species—an attractive idea which has been often discussed in entomological writings, but seldom carried out with much practical success. Other uses for such a list will unquestionably arise, and, indeed, since writing the introductory lines of this paper a most striking and interesting instance of the value of just such knowledge, in a way the possibility of which never even occurred to me, has been brought out by our fellow-member, Dr. Riley. The Hessian Fly has been very destructive for two years past in England, and the question has been, and it is an important one, whence did it come? Two important wheat-growing districts furnish England with much of this grain, *viz.*, North America and Russia. Now it happens that within a few months of each other Dr. Riley monographed the North American parasites of this insect, and Dr. Lindemann the Russian parasites. No accurate way of fixing the source of the English supply was found until Dr. Riley on his recent trip to England discovered that the parasites there were identical with the Russian forms, and, with one exception, specifically distinct from the American forms, the exception belonging to the Russian fauna as well as to the American. America is thus relieved of the onus which falls upon Russian shoulders.

This paper will therefore subserve several objects, and if it were only tolerably complete its value would be considerable. The record is, however, incomplete and necessarily more or less inaccurate.

The European records fail in many instances to record the species of the host, which often, and especially in case of *Aphididæ* and *Coccidæ*, usually having wide-spread species, debars us from much interesting information. There, such information is usually recorded in connnection with treatises on the structure and habits

of the parasites, in which the specific determination of the host is of less importance. Here in America, however, owing to the fact that little has been written upon the habits or classification of parasites, such records occur almost entirely in works on the habits of the hosts, which are usually injurious insects, or at least showy ones well known to the popular eye, and in this case the specific determination of the parasite becomes the less important. Thus in Europe we have twenty or more parasites recorded from "bark-lice on oak," and these bark-lice may or may not be identical with species in this country, and, *per contra*, in this country we all know how often occurs the phrase, "a hymenopterous parasite lives in this insect," or "an ichneumonid parasite has been bred." From these two facts, tendencies, or necessities it will be readily seen that it is almost too early for generalizations.

In the present state of our knowledge in America, perhaps no better can be done. In Europe there is less excuse; specialists abound, the insect fauna is well known, and nothing but the intentness of the individual upon his own restricted group, and his carelessness as to others, and even to the close relations in life which they bear to other groups, prevents us from having much fuller records. Few lepidopterists, for instance, save the parasites which issue from larvæ in which they are interested. The parasites are to them such unmitigated nuisances, and their appearance is such a grievous disappointment, that, unless they chance to belong to some brilliant or striking species, they are thrown aside in disgust. Here, however, I must pay my respects to Messrs. Bridgman and Fitch, who have brought about a revival in England of late years in the direction of a reform of this abuse. At the present day there are many English lepidopterists who religiously save and record the parasites which they rear.

This leads us naturally to the mention of the other entomologists whose records have been of assistance, and who have done the most in the study of the lives of parasites.

Messrs. Bridgman and Fitch are well towards the top, and they have recorded a great many rearings in *The Entomologist* during the last eight years.

Ratzeburg, in his great work on the Ichneumons of Forest Insects, recorded some eighteen hundred parasites and their hosts. It is difficult to use his observations, however, on account of the

complicated synonymy, a large proportion of the species described by him as new having been described before.

Kirchner, in his catalogue of the Hymenoptera of Europe, has brought together a great number of records of rearing of parasites, and repeats nearly all of Ratzeburg, but this part of his work was hurriedly done.

Edouard Perris, in his various papers, has recorded many parasites. These records have been brought together and published with the observations of Giraud, who was also a most industrious observer of the habits of parasites, under the caption "Liste d'éclosions d'Insectes," by Giraud and Laboulbène, in the Annals of the French Society for 1877.

Rheinhard and Hartig and Pastor Kawall in the Entomological Journal of Stettin, Westwood in the Transactions of the London Society, Snellen van Vollenhoven in his Pinacographia, Curtis in his Farm Insects, Kaltenbach in his Enemies of Plants, Mayr in his short monographs published by the Imperial Zoölogical-Botanical Society of Vienna, Brischke in his various papers published by the Königsberg Society, Buckton in his monograph of the Aphids, Wachtl in his short papers in the Vienna Entomological Journal, Cameron in recent papers published by the Glasgow Natural History Society, Lindemann of Moscow, André of Beaune, A. Dours in his Catalogue of the Hymenoptera of France, Marshall in his Monograph of the British Braconidæ, Möller in the Entom. Tidskr., and G. C. Bignell in one of the Ray Society publications, have been the principal contributors to this branch of the subject in Europe, and the principal sources of the information which I have brought together.

In this country the only attempt at a list or table is the short one prepared by myself and published in Bulletin 5 of the Division of Entomology. Nearly all of our records occur in isolated form in the writings of our economic entomologists. Riley has recorded more rearings than any other American author, in his Reports on the Insects of Missouri, in the American Entomologist, in his reports as entomologist to the U. S. Department of Agriculture, in the reports to the U. S. Entomological Commission, and in the Trans. St. L. Acad. Sci., and in the Proc. Nat. Mus. Fitch, Harris, Walsh, Le Baron, Shimer, Norton, Emily A. Smith, French, Forbes, Lintner, Comstock, Packard, Ashmead, Cook, Weed, Hubbard, Patton, Provancher have all published a greater or lesser

number of such records. Mr. Ashmead has sent me a manuscript list of over two hundred observations made by himself in Florida, many of which are as yet unpublished. Mr. Schwarz has kindly looked over my records of parasites of Coleoptera, and advised me concerning the cosmopolitan beetles, and Dr. Williston has assisted me in the same way with the Diptera.

LEPIDOPTERA.

Host.	European Parasites.	American Parasites.
Rhopalocera.		
Pieris rapæ	Hemiteles fulvipes Gr. (hyper.)	
	Apanteles rubecula Marsh.	
	Mesochorus aciculatus. All Bignell's list.	
	Pteromalus puparum L. (many authors).	Pteromalus puparum L. (many authors.)
	Apanteles glomeratus L. (many authors).	Apanteles glomeratus L. Riley, D. of A. 1883.
	Monodontomerus æreus Walk. (Mayr, Eur. Tor. 62).	Apanteles congregatus var. pieridivora. Pack.(Pack. Ichn. Pars.)
	Monodontomerus dentipes Boh. (Mayr, loc. cit.)	
Pyrameis cardui	Pimpla diluta Ratz. (Ratz. Ichn. d. F. I.)	Apanteles carduicola (Pack.) (Pack. Ichn. Pars.)
	Limneria exareolata Rtz.	
	Bracon variator Nees.	
	Apanteles emarginatus Mes. All Bignell's list.	Ichneumon rufiventris Br. (Scudd. Am. Nat. x, 610)
Pyrameis atalanta . . .	Limneria cursitans Holmgr. (Fitch, Ent. xvi, 66).	
	Hoplismenus pica Wesm. (G. et L. 399).	
	Microgaster spurius Wesm. (G. et L. 413).	Microgaster carinata Pack. (Pack. Ichn. Pars.)
	Microgaster subcompletus Nees. = annulipes Curt. (Fitch, Ent. xiv, 142).	Apanteles congregatus var. atalantæ (Pack.) (Pack. Ichn. Pars.)
	Apanteles sp. (Fitch, Ent. xiii).	Apanteles edwardsii Riley MS. (Howard, Scudd. But.)

LEPIDOPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Pyrameis atalanta . . . *Cont'd.*	Hemiteles fulvipes Gr. (Fitch, Ent. xiv, 139) "probably hyperparasitic."	Trichogramma minutissimum Pack. (Pack. Ichn. Pars.)
	Mesochorus sylvarum Hal. (Fitch, Ent. xiv, 141, undoubtedly hyperpar. on the Apanteles).	
	Amblyteles armatorius Först. Bignell's list.	
Vanessa antiopa	Hoplismenus terrificus Wsm. (G. et L. 399).	Hoplismenus morulus (Say.) (Howard, Scud. But.)
	Pteromalus puparum Linn. (Kirch. 174).	Pteromalus puparum L. (Ashm. MS. list.)
	Ichneumon fossorius Grv. (Kalt. 72).	Derostenus antiopæ (Pack.) (Pack. Ichn. Pars.)
		Pteromalus vanessæ Harr. (Harr. Cat. Ins. Mass.)
Heterocera.		
Attacus cynthia	. . . . .	Spilochalcis mariæ (Riley). (Howard, Bull. 5. D. E.)
Attacus cecropia . . .	Ophion undulatus Gr. (Brdg. Ent. xvii, 180).	Ophion macrurum L. (Riley, iv, Ins. Mo.)
	Henicospilus merdarius Gr. (Brdg. Ent. xvii, 180).	Cryptus extrematis Cress. (Riley, iv, Ins. Mo.)
		Spilochalcis mariæ (Riley). (Riley, iv, Ins. Mo.)
Orgyia antiqua	Pimpla stercorator Gr. (Kirch. 106).	
	Limneria obscurella Holmgr. (Fitch, Ent. xiv, 140).	
	Campoplex carbonarius Rtz. (Kalt. 158).	
	Campoplex unicinctus Grv. (Kalt. 158).	
	Apanteles solitarius Rtz. (Fitch, Ent. xiv. 142).	
	Telenomus dalmani Ratz. (Mayr. Schl. Gat. Tel. 709).	

LEPIDOPTERA—*Heterocera*.—Continued.

Host.	European Parasites.	American Parasites.
Plusia brassicæ	. . . . .	Limneria obscura Cress. (Ashm. MS. list.) Apanteles congregatus Say. (Riley, Rept. Ent. 1883, 121.) Copidosoma truncatellum (Dalm.) (Riley, ibid.) Trichogramma pretiosa Riley. (Ashm. MS. list.)
Leucania unipuncta. .	. . . . .	Ichneumon leucaniæ Fitch. = suturalis Cress. (Riley, ii, Ins. Mo. 53.) Ichneumon flavizonatus Cress. (Riley, iii, U. S. E. C., 128). Ophion purgatus Say. (Riley, ii, Ins. Mo. 53.) Mesochorus vitreus Walsh. (Riley, ii, Ins. Mo. 52.) (Hyperparasitic.) Pezomachus minimus Walsh. (Riley, ii, Ins. Mo. 52.) Apanteles congregatus Say. (Riley, iii, U. S. E. C. 127.) Microplitis sp. (Riley, iii, U. S. E C. 127.)
Heliothis armigera . .	. . . . .	Trichogramma pretiosa Riley. (Riley, iv, U. S. E. C. 377.)
Abraxas grossulariæ .	Ichneumon albosignatus Gr. (Kirch. 39). Ichneumon brischkei Rtz. (Kirch. 39). Ichneumon bilineatus Gr. (Snellen, Pin. 32). Ichneumon trilineatus Gmél. (Fitch, Ent. xiii, xiv, 138). Ichneumon scutellator Gr. Kawall, '55, 230.	

LEPIDOPTERA—*Heterocera.*—Continued.

Host.	European Parasites.	American Parasites.
Abraxas grossulariæ . *Cont'd.*	Pimpla examinator Fabr. (Kirch. 105). Pimpla rufata Gr. (Kirch. 106). Casinaria vidua Gr. (Fitch, Ent. xiv, 140). Campoplex orbitalis Gr. (Fitch, Ent. xix, 140). Campoplex tricolor Hart. (Kirch. 92). Mesochorus sp. (Fitch, Ent. xiv, 141). Mesochorus sericans Curt.? (Fitch, Ent. xiv, 141). Microgaster reconditus Nees. (G. et L. 413). Apanteles sp. (Fitch, Ent. xiii).	
Platyhypena scabra . .	. . . . .	Euplectrus platyhypenæ How. (Howard, Bull. 5, E D.)
Carpocapsa pomonella	Phygadeuon brevis Gr. (Kirch. 58). Campoplex pomorum Rtz. (Kirch. 91). Pristomerus vulnerator. Panz. (Kalt. 193).	Pimpla annulipes Br. (Riley, v, Ins. Mo. 49.) Macrocentrus delicatus Cress. (Riley, v, Ins. Mo. 50.)
Gelechia cerealella . .	Unnamed parasite mentioned by Reaumur (Curt. F. I).	Pteromalus gelechiæ Webster. (Webster, Rept. Ent. Ills.)
Tinea granella	Chremylus rubiginosus N. S. (Fitch, Ent. xiv, 141).	
Laverna sarcitella . . .	Bracon variegator Spin. (Curt. F. I. 370).	
Plutella cruciferarum .	Campoplex majalis Grv. (Kalt. 24).	Limneria annulipes Cress. (Riley, Rept. Ent. '83, 130.) Limneria obscura Cress. (Ashm. MS. list.)

HYMENOPTERA.

Vespa germanica . . .	Mesoleius vesparum Ratz. (G. et L. 407).	
Vespa vulgaris	Mesoleius vesparum Ratz. (G. et L. 407).	

HYMENOPTERA— *Continued.*

Host.	European Parasites.	American Parasites.
Formica rufa	Pezomachus vulpinus Gr. (Kirch. 63).	
	Elasmosoma berolinense Ruthe. (G. et L. 415).	
Limneria vulgaris, (ex Gonepteryx rhamni)	Mesochorus gracilentus Brischke. (Fitch, Ent. xvi, 67).	
Apanteles glomeratus .	Hemiteles fulvipes Gr. (Brdg. Ent. xvi, 107)	
	Hemiteles imbecillus Gr. (Brdg. Ent. xvi, 106).	
	Pteromalus microgastri Bouché. (Curt. F. I. 98).	
Trionyx rapæ	Asaphes vulgaris Walk. (Curt. F. I. 74).	
	Ceraphron carpenteri Curt. (Curt. F. I. 74).	
	Coruna clavata Curt. (Curt. F. I. 75).	
Diastrophus rubi . . .	Eupelmus annulicornis Gir. (G. et L. 420).	
	Eurytoma diastrophi Gir. (G. et L. 425).	
	Decatoma quercicola Först. (G. et L. 425).	
	Callimome rubi Schrank. (G. et L. 425).	
	Callimome cynipoides Gir. (Mayr, Eur. Tor. 58).	
	Torymus macropterus Walk. (Mayr, Eur. Tor. 58).	
Rhodites rosæ	Porizon harpurus Schrank. (Kirch. 98).	
	Orthopelma luteolator Gr. (hyper?) (Kirch. 68).	
	Microgaster ensiformis Rtz. (Kirch. 120).	
	Eupelmus degeeri Dalm. (G. et L. 420).	
	Eupelmus bedeguaris Rtz. (G. et L. 420).	
	Glyphomerus stigma Fabr. (Kirch. 154).	
	Oligosthenus stigma Fabr. (G. et L. 423).	Oligosthenus stigma Fabr. (Ashm. MS.)
	Torymus bedeguaris L. (Mayr, Eur. Tor. 57).	Torymus bedeguaris L. (Ashm. MS.)

HYMENOPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Rhodites rosæ . . . . . *Cont'd.*	Torymus dresdensis Rtz. (Kirch. 152). Torymus försteri Rtz. (Kirch. 152). Torymus metallicus Rtz. (Kirch. 152). Torymus macropterus Walk. (Mayr, Eur. Tor. 57). Torymus ater Nees, longicaudis, Rtz. and purpurascens Fb. (Kalt. 223). Callimome rosarum Gir. (G. et L. 425). Eurytoma pubicornis Möller in Entom. Tidskr. Eurytoma rosæ Nees. (G. et L. 426). Eurytoma abrotani, Rtz. E. æthiops Rtz. (Kalt. 223). Pteromalus complanatus Rtz. (Kirch. 169). Pteromalus eminens Först. (G. et L. 428). Pteromalus fuscipalpis Först. (G. et L. 429). Pteromalus inflexus Först. (G. et L. 429). Pteromalus pilosus Rtz. (G. et L. 430). Pteromalus varius K. (Kalt. 223). Tetrastichus longicaudatus Först. (Kirch. 187). Tetrastichus obtusatus Gir. (G. et L. 433).	
Nematus erichsonii . .	Pteromalus klugi Rtz. (Kirch. 171).	Pteromalus nematicidus Pack. (Rept. Ent. 1883, 146.)
Nematus grossulariæ .	Cleptes nitidula Fabr. (Kirch. 206). Tryphon grossulariæ Hart. (Kirch. 76).	
Nematus ventricosus .	Perilissus limitaris Gr. (Snellen, Pin. 92).	Hemiteles nativorus Walsh. (Riley, ix, Ins. Mo. 17.)

HYMENOPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Nematus ventricosus . . *Cont'd.*	. . . . .	Trichogramma pretiosa Riley. (Lintner, ii, N. Y. 220.) Brachypterus micropterus Say. (Riley, ix, Ins. Mo. 17.)

COLEOPTERA.

Hylotrupes bajulus . .	Cryptus minator Gr. (Kirch. 55).	
Anthrenus sp.	Hemiteles areator Panz. (Brdg. Ent. xvi, 108).	
Coccinella 9-notata . .	Homalotylus flaminius Dalm. (Kirch. 147).	
Galeruca xanthomelæna.	Homalotylus flaminius Dalm. (Mayr. Eur. Enc., 681).	
Crioceris 12-punctata .	Porizon microcephalus Gr. (Kirch. 98).	
Gastrophysa raphani .	Pteromalus mandibularis Först. (Kirch. 172).	
Cryptorhynchus lapathi.	Ichneumon hassicus Rtz. (Kirch. 42).	
	Pimpla cicatricosa Rtz. (Rtz. W. S.)	
	Ephialtes tuberculatus Fourc. (Kirch. 108).	Ephialtes irritator Fabr. (Jülich, Ent. Am. Oct.'87.)
	Limneria ruficeps Holm. (Kirch. 95).	
	Rogas marginata Nees. (Ratz., W. S.)	
	Rogas sp. (Rtz., W. S.)	
	Bracon immutator Mes. (Kirch. 111).	
	Diapria melanocorypha Rtz. (Kirch. 404).	
Gymnetron teter . . .	Pimpla gymnetri Rtz. (Kirch. 105).	
Calandra oryzæ	Meraporus graminicola (Walk.?) (Curt. F. I. 323).	Pteromalus calandræ How. (Howard, Rept. Ent. 1880.)
Bruchus granarius . .	Chremylus rubiginosus Mes. (Curt. F. I. 365)	
	Sigalphus pallipes Nees. (Curt. F. I. 364).	
Bruchus rufimanus . .	Sigalphus thoracicus Curt. (Curt. F. I. 365).	

COLEOPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Scolytus rugulosus . .	Eucoila minuta Gir. (G. et L. 416).	
	Bracon eccoptogastri Rtz. (Kirch. 111).	
	Bracon minutissimus Rtz. (Kirch. 111).	
	Euspathius brevicaudis Rtz. (Kirch. 113)	
	Brachistes longicaudis Rtz. (Kirch. 113).	
	Doryctes pomarius Reinh. (Kirch. 115).	
	Eurytoma eccoptogastri Rtz. (Rtz. W. S.)	
	Elachistus leucogramma Rtz. (Rtz. W. S).	
	Pteromalus bimaculatus Spin. (Rtz. W. S.)	Cheiropachys colon Linn. (Div. Ent. Notes.)
	Storthygocerus subulifer Ratz. (Rtz. W. S.)	Raphitelus maculatus Walk. (Div. Ent. Notes.)
	Diapria nigra Mes. (G. et L. 434).	
	Teleas punctatus Gir. (G. et L. 434).	

HEMIPTERA.

Anasa tristis	. . . . .	Telenomus anasæ Ashm. (Ashm. MS. list.)
		Encyrtus anasæ Ashm. (Ashm. MS. list.)
		Eupelmus reduvii Howard. (Ashm MS. list.)
Zelus longipes	. . . . .	Eupelmus zeli Ashm. (Ashm. MS. list.)
Siphonophora avenæ .	Ephedrus plagiator Nees. (Curt. F. I. 292).	
	Aphidius avenæ Hal. (Curt. F. I. 291).	Aphidius sp. (Unpub. notes, Div. Ent.)
Aphis brassicæ	Allotria fulviceps Curt. (Curt. F. I. 75)	Allotria brassicæ Ashm. (Ashm. MS. list.)
	Allotria quercus-infernus Curt. (Curt. F. I. 75).	
	Trionyx rapæ Curt. (Curt. F. I. 73).	Trioxys rapæ (Curt.) (Riley, Rept. Ent. 1884.)

HEMIPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Aphis brassicæ . . . . *Cont'd.*	. . . . .	Pachyneuron aphidivora Ashm. (Ashm. MS. list.)
		Encyrtus aphidiphagus Ashm.
Aphis pini	Allotria circumscriptus Htg. (Kirch. 30).	
Aphis rumicis (viciæ).	Allotria erythrocephalus Hart. (Kirch. 31).	
	Allotria heterocerus Hart. (Kirch 31).	
	Allotria melanogaster Hart. (Kirch. 31).	
	Agonioneurus varipes Först. (Kirch. 143).	
Aphis rumicis (chenopodii).	Allotria testaceus Hart. (Kirch. 31).	
	Agonioneurus tibialis (Nees). (Kirch 143).	
Aphis rumicis (aparines).	Allotria posticus Hart. (Kirch. 31).	
Aphis rumicis (papaveris).	Agonioneurus flavicornis Först. (Kirch. 143).	
	Lygocerus rosarum Först. (Kirch. 193).	
Aphis ribis	Allotria circumscriptus Hart. (Kirch. 30).	
	Trichosteresis clandestinus Nees. (Kirch. 193).	
Schizoneura lanigera . .	. . . . .	Aphelinus mali (Hald.) (Howard, Bull. 5, Ent. Div.)
Mytilaspis pomorum . .	. . . . .	Aphelinus mytilaspidis Le B. (Riley, v, Ins. Mo. 88.)
		Anaphes gracilis Howard. (Howard, Rept. Ent. 1879, 370).
Mytilaspis citricola . .	. . . . .	Aphycus flavus Howard. (ibid, 365.)
		Signiphora flavopalliata Ashm. (Ashm. MS. list.)
Mytilaspis gloverii . .	. . . . .	Limacis aspidioticola Ashm. (Ashm. MS. list.)
Diaspis rosæ	. . . . .	Aphycus brunneus Howard. (Howard, Bull. 5, Ent. Div).

HEMIPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Diaspis rosæ . . . . . *Cont'd.*	. . . . .	Aphelinus diaspidis Howard. (Howard, Rept. Ent. 1879, 355).
Diaspis carueli	. . . . .	Aphelinus mytilaspidis Le B. (ibid, 354.)
Lecanium oleæ	. . . . .	Dilophogaster californica Howard. (ibid, 368.)
Lecanium hesperidum.	. . . . .	Comys bicolor Howard. (ibid, 362.)
		Encyrtus flavus Howard. (ibid, 367.)
		Coccophagus lecanii (Fitch). (ibid, 358.)
		Coccophagus cognatus Howard. (ibid, 359.)
		Coccophagus vividus Howard. (Howard, Bull. 5, Ent. Div).
		Coccophagus flavoscutellum Ashm. (Ashm. MS. list.)
		Trichogramma flavum Ashm. (Ashm. MS. list.)
Lecanium persicæ . . .	. . . . .	Coccophagus fraternus Howard. (Howard, Rept. Ent. 1879, 359).
		Astichus (?) minutus Howard. (ibid, 370.)
Dactylopius citri . . .	. . . . .	Encyrtus inquisitor Howard. (ibid, 367.)
		Chiloneurus dactylopii Howard. (Howard, Bull. 5, Ent. Div).
		Leptomastix dactylopii Howard. (ibid.)
		Comys albicoxa Ashm. (Ashm. MS. list.)
Pseudococcus aceris . .	. . . . .	Rhopus coccois (E. A. Smith). (Howard, Rept. Ent. 1879, 362.)

DIPTERA.

Cecidomyia destructor.	Merisus destructor (Say) (Riley unpub. MS.)	Merisus destructor (Say). (Riley, H. F. Pars.)

DIPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Cecidomyia destructor *Cont'd.*	Merisus intermedius Lind. (Lind. H. F. Pars.)	Merisus subapterus Riley. (Riley, H. F. Pars.)
	Eupelmus De Geeri Dalm. (Lind. H. F. Pars.)	Eupelmus allynii (French). (Riley, H. F. Pars.)
	Chrysocharis nigripes (Lind.) (Lind. H. F. Pars.)	
	Tetrastichus sp. Lind. (Lind. H. F. Pars.)	Tetrastichus productus Riley. (Riley, H. F. Pars.)
	Platygaster Rileyi Lind. (Lind. H. F. Pars.)	Platygaster herrickii Pack. (Riley, H. F. Pars.)
Diplosis tritici	Macroglenes penetrans Westw. (Curt. F. I. 283).	
	Isostasius punctiger Nees. (Kirch. 198).	
	Platygaster tipulæ Kirby. (Curt. F. I. 280).	
	Platygaster inserens Kirby. (Curt. F. I. 281).	
	Platygaster scutellaris Nees. (Kirch. 200).	
Anthomyia ceparum .	Bothriothorax altensteini (Rtz.) (Kirch. 145).	
	Bothriothorax clavicornis (Dalm.) (Mayr, Eur. Enc. 682).	
Anthomyia radicum. .	Alysia manducator Pz. (Curt. F. I. 143).	
	Alysia ruficeps Nees. (Snellen, Pin. 24).	
	Pteromalus papaveris Först. (G. et. L. 429).	
Hydrobæa dentipes . .	Alysia manducator Pz. (Snellen, Pin. 24).	
Catabomba pinastri . .	Bassus lætatorius Fabr. (Snellen, Pin. 3).	
Syrphus ribesii	Chrysolampus syrphi Rtz. (Kirch. 160).	
Musca domestica . . .	Eucoila emarginata Hart. (Kirch. 34).	
	Figites striolatus Hart. (G. et. L. 416).	
	Spalangia nigra Latr. (G. et. L. 422).	

DIPTERA—*Continued.*

Host.	European Parasites.	American Parasites.
Musca domestica . . . *Cont'd.*	Spilogaster striolatus (= Figites?) (Kirch. 34).	
Cyrtoneura stabulans .	Alysia manducator Pz. (Snellen, Pin. 24).	
Lucilia cæsar	Alysia manducator Latr. (G. et. L. 415).	
Piophila casei	Alysia ruficeps Nees. (Snellen, Pin. 24).	
Eristalis tenax	Eucoila codrinus Hart. (Kirch. 34).	
	Diapria conica Nus. (Kirch. 204).	
Mycetophila punctata.	Proctotrupes ligatus Nees. (Kirch. 194).	
Drosophila flava . . .	Ceraphon niger Curt. (Curt. F. I. 85).	
	Miscogaster cinctipes Walk. (Curt. F. I. 85).	
	ORTHOPTERA.	
Blatta orientalis	Entedon hagenowi Rtz. (Kirch 185).	
	Evania laevigata (many authors).	Evania laevigata (many authors).
	NEUROPTERA.	
Chrysopa perla	Porizon perlæ Gir. (G. et L. 403).	Telenomus sp. (in eggs). (Howard unpublished MS.)
	Microgaster sp. (Brdg. Ent. xvi, 107).	
	Hemiteles æstivalis Gr. (Brdg. Ent. xvi, 107).	
	[Hyperparasitic! Primary parasite of the Microgaster].	
	ARANEIDÆ.	
Epeira diademata . . .	Pimpla oculatoria Gr. (G. et L. 409).	
	Polysphincta carbonator.	
	" rufipes.	

ARANEIDÆ—*Continued.*

Host.	European Parasites.	American Parasites.
Epeira diademata . . . *Cont'd.*	Polysphincta boops. (Fitch, Ent. xv.)	
	Hemiteles similis Gr. (Brdg. Int. xvi, 106).	
	Hemiteles tristator Gr. (ibid, 107).	
Agelena brunnea . . .	Pezomachus corruptor Först. (G. et L. 402).	
	Pezomachus fasciatus Gr. (Kirch. 61).	
	Pezomachus proximus Först. (G. et L. 302).	
	Pezomachus zonatus Först. (G. et L. 403).	
	Hemiteles aranearum Gir. (G. et L. 401).	
	Hemiteles formosus Desv. (Brdg. Ent. xvi, 107).	
	Hemiteles tenerinus Gr. (Brdg. Ent. xvi, 108).	

EXPLANATION OF ABBREVIATIONS USED.

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Howard, Bull. 5, D. E.—L. O. Howard in Bulletin No. 5, Division of Entomology, U. S. Department of Agriculture, Washington, 1885.

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Jülich Ent. Am.—Wm. Jülich in Entomologica Americana, October, 1887.

Lintner, N. Y.—J. A. Lintner in Second Report State Entomologist of N. Y., Albany, 1885.

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